```
SEQUENCE LISTING
                    APR 1 6 2002
<110> Gorenstein, David G.
      Luxon, Bruce A.
      Herzog, Norbert
      Ardnson, Judy
```

<120> Thio $\uparrow$ Modified Aptamer Synthetic Methods and Compositions

<130> 22144 001001

<140> 09/425,804 (141> 1999-10**-2**5

<150> 60/105,600 <151> 1998-10-26

<160> 50

<170> PatentIn Ver.

<210> 1

<211> 66

<212> DNA

<213> Artificial Sequence

<220>

<221> misc\_feature

<222> (24)..(44)

<223> n is A, T, G or C

<220>

<223> Description of Artificial  $\setminus$ Sequence; aptamer

cagtgeteta gaggateegt gaennnnn nnnnnnn nnnnnnnn nnnnncgaag ettategate cgagcg

<210> 2

<211> 22

<212> DNA

<213> Artificial Sequence

<220> description of Artificial Sequence \ aptamer

<400> 2

gccgtccaca tacgacacca cc

<210> 3

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

60

22

```
<223> Description of Artificial Sequence: aptamer
<400> 3
ggccgaccgc acagcacaac cc
                                                                          22
<210> 4
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: aptamer
ggcgcggata caacccacac gc
                                                                          22
<210> 5
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: aptamer
<400> 5
gggcccgctg tacatgcaca cg
                                                                          22
<210> 6
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: aptamer
<400> 6
                                                                          22
ggccgaccgc acagcacaac cc
<210> 7
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> description of Artificial Sequence: aptamer
<400> 7
                                                                          22
gggcccgctg tacatgcaca cg
<210> 8
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: aptamer
```

<400> 8 gggcccgctg cacgtgcaca cg	22
<210> 9 <211> 22 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: aptamer	
<400> 9 gggcccgctg tacacgcaca cg	22
<210> 10 <211> 22 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: aptamer	
<400> 10 cccgttgttg tcccactcca cg	22
<210> 11 <211> 22 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: aptamer	
<400> 11 cccgttgttg tcccgctcca cg	22
<210> 12 <211> 10 <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: aptamer	
<400> 12 gttgcgcaac	LO
<210> 13 <211> 10 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: aptamer	
<400> 13 gctgtacatg	LO

```
<210> 14
<211> 10
<212> DNA
<213> Description of Artificial Sequence: aptamer
<400> 14
                                                                    10
gttgtcccac
<210> 15
<211> 10
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: aptamer
<400> 15
                                                                    10
gttgttgtcc
<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: aptamer
<400> 16
                                                                          20
tgcagattgc gcaatctgca
<210> 17
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: aptamer
<400> 17
                                                       22
cgtgtgcatg tacagcgggc cc
<210> 18
<211> 42
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: aptamer
                                                                          42
ccaggagatt ccacccagga gattccaccc aggagattcc ac
<210> 19
<211> 14
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence: aptamer
<400> 19
ccaggagatt ccac
                                                                    14
<210> 20
<211> 10
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: aptamer
<400> 20
ggggacttcc
                                                                    10
<210> 21
<211> 62
<212> DNA
<213> Artificial Sequence
<220>
<221> misc_feature
<222> (19)..(41)
<223> n is A, T, G or C
<400> 21
                                                                                62
atgettecac gageettten nnnnnnnnn nnnnnnnnn netgegagge ggtagtetat te
<210> 22
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: aptamer
<400> 22
                                                                          22
ggggcgggg gatatggaca cc
<210> 23
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: aptamer
<400> 23
                                                                          22
gggctggtgt ggtagactcc cc
<210> 24
<211> 22
<212> DNA
<213> Artificial Sequence
```

<220> <223> Description of Artificial Sequence: aptamer	
<400> 24 cccgcccaca cacaccgccc cc	22
<210> 25 <211> 23 <212> DNA <213> Artificial Sequence	
<400> 25 gggccgggag agaacatagc gac	23
<210> 26 <211> 22 <212> DNA <213> Artificial Sequence	
<220> <221> misc_feature <222> (4) <223> n is A, T, G or C	
<220> <221> misc_feature <222> (6)(8) <223> n is A, T, G or C	
<400> 26 cccncnnca cacaccgcc cc	22
<210> 27 <211> 22 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: aptamer	
<400> 27 ggtatactet cegeceetee ee	22
<210> 28 <211> 26 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: aptamer	
<400> 28 cccacatgta cacgccgccc ccgccc	26
<210> 29 <211> 22	

•

```
<212> DNA
<213> Artificial Sequence
<220>
<221> misc_feature
<222> (9)
<223> n is A, T, G or C
<220>
<221> misc_feature
<222> (14)
<223> n is A, T, G or C
<400> 29
                                                                           22
cccacatgna cacnccgccc cc
<210> 30
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: aptamer
<400> 30
                                                                          22
gggcgtatat gtgtggcggg gg
<210> 31
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: aptamer
<400> 31
                                                                    14
gtggaatctc ctgg
<210> 32
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> (9)
<223> thymidine 3'-O-phosphorothioate
<220>
<221> modified_base
<222> (10)
<223> thymidine 3'-O-phosphorothioate
<400> 32
                                                                    14
ccaggagatt ccac
```

<210> 33

```
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> (2)
<223> thymidine 3'-O-phosphorothioate
<220>
<221> modified_base
<222> (12)
<223> thymidine 3'-O-phosphorothioate
<400> 33
                                                                     14
gtgggaatctc ctgg
<210> 34
<211> 14
<212> DNA
<213> Artificial Sequence
 <220>
 <221> modified_base
 <222> (7)
 <223> thymidine 3'-O-phosphorothioate
 <220>
 <221> modified_base
 <222> (9)
 <223> thymidine 3'-O-phosphorothioate
 <400> 34
                                                                     14
 gtggaatctc ctgg
 <210> 35
  <211> 14
  <212> DNA
 <213> Artificial Sequence
  <220>
  <221> modified_base
  <212> (2)
  <213> thymidine 3'-O-phosphorothioate
  <220>
  <221> modified_base
  <222> (7)
  <223> thymidine 3'-O-phosphorothioate
  <220>
  <221> modified_base
  <222> (9)
  <223> thymidine 3'-O-phosphorothioate
  <221> modified_base
```

```
<222> (12)
<223> thymidine 3'-O-phosphorothioate
<400> 35
                                                                    14
gtggaatctc ctgg
<210> 36
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<212> Compliment (2)
<213> phosphorothioate
<220>
<221> modified base
<212> Compliment (12)
<213> phosphorothioate
<223> Description of Artificial Sequence: aptamer
<400> 36
                                                                    14
ccaggagatt ccac
<210> 37
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<212> Compliment (5)
<213> phosphorothioate
<220>
<221> modified_base
<212> Compliment (7)
<213> phosphorothicate
<220>
<223> Description of Artificial Sequence: aptamer
<400> 37
                                                                    14
ccaggagatt ccac
<210> 38
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> Complement (2)
<223> phosphorothioate
```

```
<220>
<221> modified_base
<222> Compliment (5)
<223> phosphorothioate
<220>
<221> modified base
<222> Compliment (7)
<223> phosphorothioate
<220>
<221> modified base
<222> Compliment (12)
<223> phosphorothioate
<220>
<223> Description of Artificial Sequence: aptamer
<400> 38
                                                                    14
ccaggagatt ccac
<210> 39
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> (9)..(10)
<223> phosphorothioate
<220>
<221> modified base
<222> Complement (2)
<223> phosphorothioate
<220>
<221> modified base
<222> Complement (12)
<223> phosphorothioate
<220>
<223> Description of Artificial Sequence: aptamer
<400> 39
                                                                    14
ccaggagatt ccac
<210> 40
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified base
<222> (9)..(10)
```

<223> phosphorothioate

```
<220>
<221> modified base
<222> Complement (5)
<223> phosphorothioate
<220>
<221> modified_base
<222> Complement (7)
<223> phosphorothioate
<220>
<223> Description of Artificial Sequence: aptamer
<400>38
ccaggagatt ccac
                                                                    14
<210> 40
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> (9)..(10)
<223> phosphorothioate
<220>
<221> modified base
<222> Complement (2)
<223> phosphorothioate
<220>
<221> modified base
<222> Complement (5)
<223> phosphorothioate
<220>
<221> modified_base
<222> Complement (7)
<223> phosphorothioate
<220>
<221> modified base
<222> Complement (12)
<223> phosphorothioate
<220>
<223> Description of Artificial Sequence: aptamer
<400> 41
                                                                    14
ccaggagatt ccac
<210> 42
<211> 22
<212> DNA
<213> Artificial Sequence
```

```
<223> Description of Artificial Sequence: aptamer
                                                                          22
<400> 42
agttgagggg actttcccag gc
<210> 43
<211> 43
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<212> (9)
<213> phosphorodithioate
 <220>
 <221> modified_base
 <212> (20)
 <213> phosphorodithioate
 <220>
 <221> modified_base
 <212> (9)
 <213> phosphate ester
 <220>
 <221> modified_base
 <212> (20)
 <213> phosphate ester
                                                                                  43
  <400> 43
  ccaggagatt ccacttttgt ggaatctcct gga
  <210> 44
  <211> 14
  <212> DNA
  <213> Artificial Sequence
  <220>
  <221> modified_base
  <222> (9)
  <223> dithioate
  <220>
  <221> modified_base
   <222> (10)
   <223> dithioate
   <223> Description of Artificial Sequence: oligonucleotide phosphorodithioate
                                                                       14
   <400> 44
   ccaggagatt ccac
   <210> 45
```

```
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> (3)
<223> adenine phosphorodithioate
<220>
<221> modified_base
<222> (13)
<223> adenine phosphorodithioate
<400> 45
                                                                     14
ccaggagatt ccac
<210> 46
<211> 14
<212> DNA
 <213> Artificial Sequence
 <220>
 <221> modified_base
 <222> (6)
 <223> adenine phosphorodithioate
 <220>
 <221> modified_base
 <222> (8)
 <223> adenine phosphorodithioate
 <400> 46
                                                                      14
 ccaggagatt ccac
 <210> 47
  <211> 14
  <212> DNA
  <213> Artificial Sequence
  <220>
  <221> modified_base
  <222> (3)
  <223> adenine phosphorodithioate
  <220>
  <221> modified_base
  <222> (6)
  <223> adenine phosphorodithioate
  <220>
  <221> modified_base
  <222> (8)
  <223> adenine phosphorodithioate
  <400> 47
                                                                       14
  ccaggagatt ccac
```

```
<210> 48
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> (6)
<223> adenine phosphorodithioate
<220>
<221> modified_base
<222> (8)
<223> adenine phosphorodithioate
<220>
<221> modified_base
<222> (13)
<223> adenine phosphorodithioate
<400> 48
                                                                    14
ccaggagatt ccac
<210> 49
<211> 14
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> (3)
<223> adenine phosphorodithioate
<220>
<221> modified_base
<222> (6)
<223> adenine phosphorodithioate
<220>
<221> modified_base
<222> (8)
<223> adenine phosphorodithioate
<220>
<221> modified_base
<222> (13)
<223> adenine phosphorodithioate
<220>
<223> Description of Artificial Sequence: aptamer
<400> 49
                                                              14
ccaggagatt ccac
<210> 50
<211> 14
```

```
<212> DNA
<213> Artificial Sequence
<220>
<221> modified_base
<222> (3)
<223> adenine phosphorodithioate
<220>
<221> modified_base
<222> (4)
<223> phosphorodithioate
<220>
<221> modified_base
<222> (9)
 <223> phosphorodithioate
 <220>
 <221> modified_base
 <222> (10)
 <223> phosphorodithioate
 <223> Description of Artificial Sequence: aptamer
 <400> 50
 ccaggagatt ccac
```

14